

DETAILED ACTION

Claims 1-10, 13-18, 20, 23, 24, and 26 are pending. Claims 1-10, 14, 20, 23, 24, and 26 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 2/6/2009.

A rejection to Claims 13 and 15-18 is set forth below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over YOSHIDA (6,270,437) in view of SCHMIDT (2,913,916).

Regarding Claim 13, YOSHIDA teaches "a push block (32) for use with a metallic belt wound between annular V-grooves of a drive pulley (6) and a driven pulley (11)."

YOSHIDA teaches "a plurality of the push blocks (32) are for being superimposed with one another along the longitudinal direction of the metallic belt (15), the push block (32) comprising: a front surface located at a front side of the push block in a travel direction of the push block and a rear surface located at a rear side of the

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push block in the travel direction; a side contact surface (37) opposing inner side surfaces of the annular V-grooves of both pulleys (6) (11), the side contact surface extending between the front and rear contact surfaces the side contact surface having an associated lengthwise direction and an associated widthwise direction is generally parallel to a travel direction of the push block (32).”

YOSHIDA does not teach “and a front half of the contact surface forming an obtuse angle with a front surface of the push block, and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block, and a ridge line comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys (Fig. 26), and extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.”

SCHMIDT teaches a front half of the contact surface (4)(4') forming an obtuse angle with a front surface of the push block (24)(26), and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block (24) (26), and a ridge line (pointed portion of 4 and 4') (Fig. 3) comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys, and extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in YOSHIDA with the contact surface angles of SCHMIDT for improved grip between the push blocks and the pulleys.

YOSHIDA does not teach “a push block is formed by bending a single wire material and then performing pressing.” Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. Bending and pressing or another method would result in the same structure of the product MPEP 2113.

YOSHIDA teaches wherein the metallic belt has a metal endless band (31) having at least one layer (33) and having a plurality of metal push blocks (32) engaged and superimposed with one another on the band (31).

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616) and SCHMIDT (2,913,916).

Regarding Claim 15, IVEY teaches “a push block (30) (Fig. 7) for use with a metallic belt wound between annular V-grooves of a drive pulley and a driven pulley, wherein a plurality of the push blocks are for being superimposed with one another along the longitudinal direction of the metallic belt (see Fig. 2), the push block (30) comprising: a front surface and a rear surface; a side contact surface (36) opposing inner side surfaces of the annular V-grooves of both pulleys, the side contact surface

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extending between the front and rear contact surfaces, the side contact surface having an associated lengthwise direction and an associated widthwise direction that is transverse to the lengthwise direction, whereby the widthwise direction is generally parallel to a travel direction of the push block (36) (Fig. 3).”

IVEY teaches “a front portion of the contact surface forming an obtuse angle with a front surface of the push block (30), and a groove (space where block B is) extending along the entire length of the contact surface at the middle of the contact surface (36), wherein an inner wall of the groove and the contact surface defines the ridge line that functions as the oil film breaking portion, which forms on the inner side surfaces of the annular V-grooves of the pulleys (see Fig. 2),

IVEY does not teach “a push block is formed by bending a single wire material and then performing pressing.” Even though the product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. Bending and pressing or another method would result in the same structure of the product or an obvious difference, see MPEP 2113.

IVEY does not teach “and a front half of the contact surface forming an obtuse angle with a front surface of the push block, and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block, and a ridge line comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys (Fig. 26), and

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extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction.”

SCHMIDT teaches a front half of the contact surface (4)(4') forming an obtuse angle with a front surface of the push block (24)(26), and a rear half of the contact surface forming an obtuse angle with a rear surface of the push block (24)(26), and a ridge line (pointed portion of 4 and 4') (Fig. 3) comprising a line formed by an intersection of said front half and said rear half, said ridge line functioning as an oil film breaking portion for breaking an oil film, which forms on the inner side surfaces of the annular V-grooves of the pulleys, and extending along the entire length of the contact surface in substantially the lengthwise direction and at a middle part of the contact surface in the widthwise direction (Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the contact surface angles of MIURA for improved grip between the push blocks and the pulleys..

IVEY does not teach wherein the metallic belt has a metal endless band having at least one layer and having a plurality of metal push blocks engaged and superimposed with one another on the band.

MIURA teaches a metallic belt with a metal endless band (110) having at least one layer [0024] and having a plurality of metal push blocks (100) engaged and superimposed with one another on the band (110).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the metal endless band in MIURA to create a more lightweight belt.

As per claim 16, IVEY as modified teaches wherein the groove (surface at block B) has a rectangular cross section (Fig. 2).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616) and SCHMIDT (2,913,916) and further in view of SUGIMOTO (4,718,881).

As per claim 17, IVEY as modified does not teach wherein the groove has a triangular cross section.

SUGIMOTO teaches a groove with a triangular cross section. The cross section of the groove inside (3) is triangular.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the triangular groove cross section in SUGIMOTO to create a push block contact surface which has a longer wearing life.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over IVEY (4,386,922) in view of MIURA (2003/0162616) and SCHMIDT (2,913,916) and further in view of BRANDSMA (6,086,499).

As per claim 18, IVEY as modified does not teach the side contact surface includes a plurality of grooves extending parallel to the travel direction of the push block, with the width of the groove at the front side in the travel direction being wider than the width at the rear side in the travel direction.

BRANDSMA teaches grooves (16) extending parallel to the travel direction of the push block (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the push block in IVEY with the grooves in BRANDSMA to create a push block contact surface which has a smaller contact area for more grip.

Response to Arguments

Applicant's arguments, see Remarks pg. 11 para. 2, filed 7/12/2011, with respect to claims 13 and 15-18 have been fully considered and are persuasive. The rejection of claims 13 and 15-18 has been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY LIU whose telephone number is (571)270-7018. The examiner can normally be reached on Mon-Thurs 7:30am - 5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MICHAEL MANSEN can be reached on (571)272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael R Mansen/
Supervisory Patent Examiner, Art Unit 3654

/H. L./
Examiner, Art Unit 3654